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Deliver to: Examiner A. Rao
Firm Name: U.S. PATENT AND TRADEMARK OFFICE
Fax Number: 571-273-8300 **Telephone No.:**
From: Sheryl Sue Holloway
Date: January 9, 2006 **Time:** 3 pm (Pacific Time)
Operator: Cheri Clinkenbeard **Matter:** 80398.P496
Number of pages including cover sheet: 10
In Re Patent Application of: Paniconi, et al.
Application No.: 10/052,699
Filed: 1/17/02
For: Motion Segmentation System with Multi Frame Hypothesis Tracking
Enclosed are the following documents: a copy of the Appendix A (6 pgs.), a Photocopy of the date stamped return-receipt postcard (1 pg).

CERTIFICATE OF TRANSMISSION

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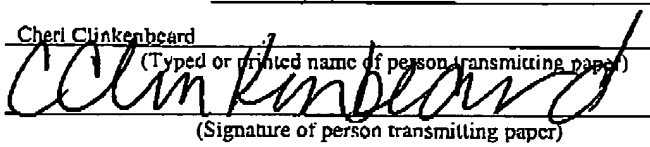

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Attorney's Docket No.: 080398.P496 PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:	
Paniconi, et al.	Examiner: Rao, A.
Application No.: 10/052,699	Art Unit: 2613
Filed: January 17, 2002	
For: Motion Segmentation System with Multi Frame Hypothesis Tracking	

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Correspondence

On September 13, 2005, Applicant submitted an Appeal Brief (5 pages) along with an Appendix A (6 pages) containing the currently pending claims. An itemized stamped return-receipt postcard was date stamped September 15, 2005 by the USPTO and returned to us. The postcard indicates that the office received the Appendix A.

In response to the communication regarding the Appeal Brief dated December 29, 2005, a copy of the Appendix A and a photocopy of the date stamped return-receipt postcard included herewith. Applicant believes no extension of time is due because the postcard is evidence the Appendix A was timely filed.

Please charge any shortages and credit any overages to our Deposit Account No. 02-2666.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN

Dated: Jan. 9 ,2006

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BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP
LOS ANGELES

Application No.: 10/052,699 **Filing/Issue Date:** 1/17/02 **Docket No.:** 80398.P496
Date Mailed: 9/13/05 **Due Date(s):** 9/13/05 ****
Client: Sony Electronics Inc. **Atty/Sec:** SSH/clc
Title: Motion Segmentation System with Multi-Frame Hypothesis Tracking
First Named Inventor: Paniconi
The following has been received in the U.S.P.T.O. on the date stamped hereon:

Transmittal Letters & Certificate of Mailing
- ☐ Transmittal Letter (1 pg.)
- ☒ Fee Transmittal (3 pgs. each)
- ☐ RCE (Request for Continued Examination)
- ☐ Transmittal of Formal Drawings
- ☐ Issue Fee Transmittal (1 pg)
- ☒ Certificate of Mailing
- ☐ Express Mail No.: «Expressmail»

Missing Parts, Formal Papers
- ☐ Response to Notice of Missing Parts
- ☐ Assignment & Cover sheet (_____ pgs.)
- ☐ Declaration & POA (_____ pgs.)

Amendment / Response
- ☐ Amendment/Response (___ pgs.)
- ☐ Examiner Interview Summary (___ pgs.)

☒ Other: Appendix A (12 pgs.)

OIPE IAP87 SEP 15 2005 PATENT & TRADEMARK OFFICE

Petitions & Appeals
- ☐ Petition for Extension of Time:
- ☐ Notice of Appeal
- ☒ Appeal Brief (5 pgs. each)
- ☐ Reply Brief (_____ pgs.)

Other
- ☐ Information Disclosure Statement & PTO/SB/08 (_____ pgs.) (previously 1449)
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- ☐ Drawings: _____ sheets, _____ figures
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- ☒ Check No. 0043 Amount $ 500.-
- ☐ Check No. _____ Amount $ _____

Date 1/13/2006 **Client:** Sony Electronics Inc.
Docket Initials _____ 80398.P496
Dock. Sup. Initials _____
Atty Initials _____ SSH
Pat/Ser/Reg 052699
Description: 142

Watch for examiner's answer to appeal; appeal brief filed 9/13/2005

9/26/2005 Cleto Cadano 457765

Atty Docket No. 080398.P496 *Patent*

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of:	Examiner:	Rao, Anand Shashikant
Paniconi, et al.	Art Unit:	2613
Application No. 10/052,699		
Filed: January 17, 2002		
For: MOTION SEGMENTATION SYSTEM WITH MULTI-FRAME HYPOTHESIS TRACKING		

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPENDIX A FOR
APPEAL BRIEF UNDER 37 C.F.R. § 41.37

1. (Previously amended) A method comprising:

identifying a plurality of motion classes for a frame of video data, each motion class having at least one region classified thereto, wherein a region is poorly classified if it is classified as belonging to an improper class;

determining a region to be a poorly classified region;

forming a set of class hypotheses for the poorly classified region, the set of class hypotheses containing at least one possible motion class;

determining a similarity measure for the poorly classified region with respect to a set of past and future video data, the similarity measure indicating a degree of consistency between a hypothesis for the motion of the poorly classified region and the motion of the corresponding regions in past and future frames; and

reclassifying the poorly classified region to one of the at least one possible motion classes according to the similarity measure.

2. (Original) The method of claim 1, wherein the set of past and future video data comprises:

at least one preceding frame of video data; and

at least one succeeding frame of video data.

3. (Original) The method of claim 1, wherein reclassifying according to the similarity measure includes:

determining which of the at least one possible motion classes are suitable for the poorly classified region using the similarity measure.

4. (Original) The method of claim 3 wherein reclassifying further includes:

assigning the poorly classified region to a motion class of the at least one possible motion class with an optimal similarity measure.

5. (Original) The method of claim 4, wherein the optimal similarity measure is a minimum similarity measure.

6. (Original) The method of claim 1, wherein determining a region to be a poorly classified region comprises:

measuring the distortion of a region;

comparing the measured distortion of the region to a distortion threshold; and

determining the region to be poorly classified if the measured prediction is greater than the prediction error threshold.

7. (Original) The method of claim 1, wherein determining a region to be a poorly classified region comprises:

measuring the prediction error of a region;

comparing the measured prediction error of the region to a prediction error threshold; and

determining the region to be poorly classified if the measured prediction is greater than the prediction error threshold.

8. (Previously amended) The method of claim 1, wherein the reclassification of a poorly classified region in an image comprises finding the minimum of a measure over all class hypotheses according to the equations arg $\min_i(A(K_i))$, where K_l is a class hypothesis, indexed by i, $A(K_i)=min(A_{past}(K_i), A_{past}(K_i))$, $A_{past/future}=\frac{1}{N}\sum_t\sum_B D(K_t^{p/f}, K_t)$; $A_{past/future}$ is a measure of the consistency through the distortion quantity, D, between a hypothetical class K_l and its corresponding class $K^{p/f}$ on past/future frames.

9. (Previously amended) A computer-readable medium comprising computer program instructions which, when executed by a processor, cause the processor to perform a hypothesis algorithm comprising:

identifying a plurality of motion classes for a frame of video data, each motion class having at least one region classified thereto, wherein a region is poorly classified if it is classified as belonging to an improper class;

determining a region to be a poorly classified region;

forming a set of class hypotheses for the poorly classified region, the set of class hypotheses containing at least one possible motion class;

determining a similarity measure for the poorly classified region with respect to a set of past and future video data, the similarity measure indicating a degree of consistency between a hypothesis for the motion of the poorly classified region and the motion of the corresponding regions in past and future frames; and

reclassifying the poorly classified region to one of the at least one possible motion classes according to the similarity measure.

10. (Original) The computer-readable medium of claim 9, wherein the set of past and future video data comprises:

at least one preceding frame of video data; and

at least one succeeding frame of video data.

11. (Original) The computer-readable medium of claim 9, wherein determining a region to be a poorly classified region comprises:

measuring the distortion of a region;

comparing the measured distortion of the region to a distortion threshold; and

determining the region to be poorly classified if the measured prediction is greater than the prediction error threshold.

12. (Original) The computer-readable medium of claim 9, wherein determining a region to be a poorly classified region comprises:

measuring the prediction error of a region;

comparing the measured prediction error of the region to a prediction error threshold; and

determining the region to be poorly classified if the measured prediction is greater than the prediction error threshold.

13. (Previously amended) A video device comprising:

means for forming a set of class hypotheses for a region of a frame of video data;

means for determining a similarity measure for the region with respect to a set of past and future video data; and

means for reclassifying the region according to the similarity measure if the region has been poorly classified as belonging to an improper class.

14. (Original) The video device of claim 13, wherein the set of past and future data comprises:

at least one preceding frame of video data; and

at least one succeeding frame of video data.

15. (Original) The video device of claim 13, further comprising:

means for determining a region to be poorly classified by a) measuring the distortion of a region, b) comparing the measured distortion of the region to a distortion threshold, and c) determining the region to be poorly classified if the measured prediction is greater than the prediction error threshold.

16. (Original) The video device of claim 13, further comprising:
means for determining a region to be poorly classified by a) measuring the prediction error of a region, b) comparing the measured prediction error of the region to a prediction error threshold, and c) determining the region to be poorly classified if the measured prediction is greater than the prediction error threshold.

17. (Previously amended) A video device comprising:

a motion compensation component configured to form a set of class hypotheses for a region of a frame of video data, to determine a similarity measure for the region with respect to a set of past and future data, and to reclassify the region according to the similarity measure if the region has been poorly classified as belonging to an improper class.

18. (Original) The video device of claim 17, wherein the set of past and future data comprises:

at least one preceding frame of video data; and

at least one succeeding frame of video data.

19. (Original) The video device of claim 17, wherein the region is reclassified by finding the minimum similarity measure and assigning the region to a class having the minimum similarity measure.

20. (Previously amended) A method comprising:

performing motion estimation for a frame containing a plurality of motion classes, each motion class having at least one region classified thereto, wherein a region is poorly classified if it is identified as belonging to an improper class;

identifying at least one poorly classified region;

selecting a new motion class for each poorly classified region;

reclassifying the poorly classified region to the new motion class; and

re-estimating the poorly classified region based on a result of reclassifying the poorly classified region.

21. (Original) The method of claim 20 wherein reclassifying includes:

using a set of past and future data according to a hypothesis tracking algorithm.